PROGRESS IN SURFACE SCIENCE

Volume 42, Numbers 1–4 1993

CONTENTS

Editor's Note ix

Foreword by MARIA STĘŚLICKA xi

1. Special Session on Surface States

a) Historical Introduction

Igor E. Tamm: The Model Man 3
by S.G. DAVISON

Igor Yevgenevich Tamm - Life and Scientific Activity 7
by A.N. NAUMOVETS

From Tamm to Shockley: An Historical Comment 11
by M. STĘŚLICKA

b) Surface States

The Concepts of Surface States 21
by F. FORSTMANN

Green Functions for Surface Problems 33
by F. GARCÍA-MOLINER

Simple Models of Tamm Surface States and of Subsurface Impurities 35
by I. BARTOŠ and P. JAROŠ

(Contents Continued)

(Continuation of Contents)

Field Emission Spectroscopy 45
by A. MODINOS

Optical Detection of Surface States 55
by G. CHIAROTTI

c) Image States

Image States: Idea and Theoretical Development 67
by M.E. URANGA, A. RIVACOBA and P.M. ECHENIQUE

Spectroscopy of Metal Surface States by Inverse Photoemission 75
by N. MEMMEL

Spectroscopy of Image States by Two-Photon Photoemission 89
by W. STEINMANN

2. Field Emission Session

Professor Jan Nikliborc — Pioneer of Experimental Physics in Wrocław 97
by R. MĘCLEWSKI

On the Early History of Field Emission Including Attempts of Tunneling Spectroscopy 101
by C. KLEINT

Field Emission Current Fluctuations of Adsorbed Layers 117
by R. BLASZCZYSZYN

Field Evaporation and Field Desorption from HTSC Single-Crystal Surfaces 131
by V.N. SHREDNIK

Dynamic Studies of Surface Reactions with Microscopic Techniques 143
by J.H. BLOCK, M. EHSASI and V. GORODETSKII

Theory of Electron Emission in High Fields from Atomically Sharp Emitters: 169
Validity of the Fowler-Nordheim Equation
by P.H. CUTLER, J. HE, N.M. MISKOVSKY,
B. WEISS and T.E. SULLIVAN

(Contents Continued)

(Continuation of Contents)

3. Thin Films

Electronic Properties of Island Thin Films Caused by Surface Scattering of Electrons 189
by R.D. FEDOROVICH, A.G. NAUMOVETS and P.M. TOMCHUK

When Are Thin Films of Metals Metallic? 201
by E.W. PLUMMER and P.A. DOWBEN

4. Adsorption

Studies of Adsorbed Molecules by X-ray Photoelectron Diffraction (XPD) 219
by H.P. BONZEL

Hydrogen Adsorption on Group 1 B Metals 231
by R. DUŚ

Hydrogen–Induced Reconstruction of Transition Metal Surfaces 245
by K. MÜLLER

Interaction of SO_2 with Single Crystal Metal Surfaces 257
by H.-W. WASSMUTH, J. AHNER, M. HÖFER and H. STOLZ

5. Interfaces

Surface States in Semiinfinite Superlattices 271
by J. ARRIAGA, F. GARCÍA–MOLINER and V.R. VELASCO

Schottky Barrier Formation in the Low Metal Coverage Limit 281
by F. FLORES, R. RINCÓN, J. ORTEGA, F.J. GARCÍA–VIDAL and R. PÉREZ

Growth Modes in Homo- and Heteroepitaxial Growth 297
by M. HENZLER

(Contents Continued)

(Continuation of Contents)

6. Electronic Structure of Surfaces

Structural and Dynamical Properties of Surfaces from *ab-initio* Molecular Dynamics 319
by C.M. BERTONI, A.I. SHKREBTII, R. DI FELICE and F. FINOCCHI

Temperature Effects in Angle–Resolved Photoemission Spectra from Metals 331
by A. GOLDMANN and R. MATZDORF

Chemical Trends in Adsorption on Semiconductor Surfaces: 351
Results from Local Density Theory

by P. KRÜGER and J. POLLMANN

7. Other topics

Symmetry and Mind in the Dynamics of Evolution of the Universe 367
by J. MOZRZYMAS

Topological Correlations at the Surface Backscattering 381
by L. WOJTCZAK

Programme of the Seminar 393

List of Participants 407

Contents of Vacuum (Contributed Papers) 417